6388-0501-0

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF	:	
Beatrice TOUMI, et al.	:	EXAMINER: YU, GINA C.
SERIAL NO: 09/533,361	:	
FILED: MARCH 22, 2000	:	GROUP ART UNIT: 1617

FOR: TIGHTENING AGENT COMPRISING AT LEAST ONE GRAFTED SILICONE POLYMER

DECLARATION UNDER 37 C.F.R. 1.132

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

I, Marco VICIC, hereby declare:

1. I am employed by L'ORÉAL as an engineer and have experience in the field of measuring physical properties of cosmetic products, particularly tensioning effect.

2. The following observations and experiments were carried out by me or under my direct supervision and control.

3. Four compositions were prepared. The polymers were present in each composition in an amount of 7% (active material) by weight.

4. Composition A contained LO21 Dry sold by 3M, a polymer having a polysiloxane backbone grafted by at least one non-silicone organic monomer (polydimethyl siloxane having propyl thio-3 methyl acrylate/methyl methacrylate/methacrylic acid copolymer). Composition A is representative of compositions useful in the invention methods in the present application.

5. Compositions B-D were comparative compositions. Composition B contained a silicone/dimethylaminoethyl methacrylate copolymer sold by Wacker under the trade name Jetsoft NFS (a conditioning foaming agent). Composition C contained a methyl methacrylate/2-ethylhexyl acrylate/silicone copolymer sold by Tasei Chemical Industries under the trade name Acrit 8HV-1023 (a film forming agent). Composition D contained a butyl acrylate/silicone copolymer sold by Dow Corning under the trade name Dow Corning TIB 4-220 (a film forming agent). The polymers in Compositions C and D were copolymers containing polysiloxane and non-silicone moieties. However, these polymers did not have a polysiloxane backbone grafted by at least one non-silicone organic monomer. They were arranged in a different configuration. Also, the polymer in Composition B differed from the polymers of the present invention for at least the reason that it did not contain sulfur.

6. The tensioning effect of Compositions A-D was measured via an in vitro retraction test which quantified the tightening effect of a composition applied on an elastomeric substrate. Specifically, 30 µl of each composition tested was applied on a rectangular (10 x 40 mm) elastomeric substrate having an elastic modulus of 20 MPa and a thickness of 100 µm. The substrate was placed under drying conditions at 22+/-3°C and 40+/-10% humidity. The width of the center of the substrate was measured after 3 hours and after 24 hours of drying (the tension/tightening exhibited by the dried composition is directly related to the decreasing width at the center of the substrate). The tensioning/tightening effect (TE) was quantified as follows:

$TE\ (\%) = (L_0 - L_{3h} / L_0) \times 100$

Where L_0 = initial width = 10 mm

And L_{3h} = width after 3 hours of drying

A similar analysis was conducted after 24 hours of drying. The following results were obtained:

	TE after 3 hours drying (%)	TE after 24 hours drying (%)
Composition A	30	33
Composition B	0	0
Composition C	0	0
Composition D	20	24

7. Invention Composition A provided significant tensioning action, particularly as compared to Comparative Compositions B-D. Specifically, Comparative Compositions B and C did not exhibit tensioning effect. Furthermore, as compared to Composition D, Composition A had 50% numerically higher tensioning effect value after 3 hours, and 37.5% numerically higher tensioning effect value after 24 hours. Thus, Invention Composition A possessed significantly higher tensioning effect than Comparative Compositions B-D.

8. Next, the tensioning effect of Composition A and Composition D were compared at different concentrations (4.5% and 2%) according to the procedures set forth above. The following results were obtained:

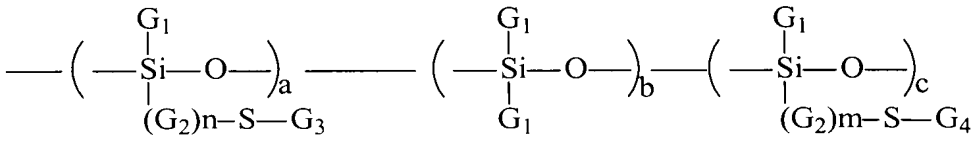
	TE after 3 hours drying (%)	TE after 24 hours drying (%)
Composition A (4.5%)	37	39
Composition D (4.5%)	13.6	15
Composition A (2%)	21	23
Composition D (2%)	3	3

9. Invention Composition A at both 4.5% and 2% concentrations provided significantly better tensioning action compared to Comparative Composition D. Specifically, Comparative Composition A had almost 200% numerically higher tensioning effect value

after 3 hours, and 150% numerically higher tensioning effect value after 24 hours than Composition D at 4.5% concentration. Similarly, Comparative Composition A had 700% numerically higher tensioning effect value after 3 hours and after 24 hours than Composition D at 2% concentration. Thus, Invention Composition A possessed significantly higher tensioning effect than Comparative Composition D.

10. This vast difference in tensioning effect among the different polymers was surprising and unexpected given the similarity of the compositions and the similarity of the moieties in the polymers. Also, this difference in tensioning effect demonstrates that not all film forming agents are effective tensioning agents (see, for example, Comparative Compositions C and D).

11. The increased tensioning effect obtained with Invention Composition A is representative of the present invention. That is, because tensioning effect corresponds to effectiveness in reducing cutaneous signs of aging or wrinkles for purposes of the present invention, I would expect compositions comprising an amount of at least one grafted silicone polymer effective to reduce signs of cutaneous aging or wrinkles, wherein said grafted silicone polymer comprises a polysiloxane portion and a portion comprising a non-silicone organic chain, one of the two portions constituting a main chain of the polymer and the other being grafted to the main chain, wherein the grafted silicone polymer is a polymer with a polysiloxane backbone grafted by at least one non-silicone organic monomer and comprises, in its structure, the unit of following formula (IV):



(IV)

in which the G_1 groups, which are identical or different, represent hydrogen or a C_1-C_{10} alkyl group or alternatively a phenyl group; the G_2 groups, which are identical or different,

represent a C_1-C_{10} alkalene group; G_3 represents a polymeric group prepared by the (homo)polymerization of at least one anionic monomer with ethylenic unsaturation; G_4 represents a polymeric group prepared by the (homo)polymerization of at least one hydrophobic monomer with ethylenic unsaturation; m and n are, independently of one another, equal to 0 or 1; a is an integer ranging from 0 to 50; b is an integer which can be between 10 and 350 and c is an integer ranging from 0 and 50, with the proviso that one of the parameters a and c is other than 0, to possess improved tensioning effects and, thus, improved signs of cutaneous aging/wrinkle reducing effects like those of Invention Composition A. I have no reason to expect otherwise.

12. The difference in tensioning effect and, thus, signs of cutaneous aging/wrinkle reducing effects between the Invention Composition and the Comparative Compositions demonstrates the surprising and unexpected benefit derived from using the claimed polymers in the Invention Methods.

13. The improved tensioning effects associated with the claimed polymers would, of course, be commercially significant -- compositions containing such polymers would be more effective at reducing signs of aging/wrinkles and, thus, more popular with consumers.

14. The undersigned petitioner declares further that all statements made herein of her own knowledge are true and that all statements made on information and belief are believe to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

15. Further deponent sayeth not.

Marco Vicic
Name

Vicic Marco
Signature

May, 06, 2008
Date